



## Renaming of three recently described eels of the genus *Neenchelys* (Teleostei: Anguilliformes: Ophichthidae) from the western Pacific

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### Abstract

In our earlier paper (Ho *et al.*, 2013), we described three new species of the eel genus *Neenchelys* Bamber, 1915. Unfortunately, the critical step of registering the work in ZooBank was omitted, thus rendering the names unavailable. In this paper, we present abbreviated descriptions of the new species in order to make these names available in accordance with the amended Article 8.5 of the *International Code of Zoological Nomenclature*.

### Introduction

Ho *et al.* (2013) reviewed the myrophine worm-eel genus *Neenchelys* in which they recognized 9 species, including descriptions of three new species. However, according to articles 8.5.3.3 and 78.2.4 of the *International Code of Zoological Nomenclature*, the register numbers on ZooBank occurred after the work was published and the act of naming the three new species is thus invalid (ICZN, 2008, 2011, 2012). In order to make these names available, a minimum requirement for naming a species provides for each name that was originally described in Ho *et al.* (2013). These species are dated to the present work, whereas the names provided in Ho *et al.* (2013) should not be followed.

### Materials and methods

Type specimens are those listed in and detailed descriptions and illustrations can be found in Ho *et al.* (2013). Abbreviations of institutions follows Fricke & Eschmeyer (2015, online version). Others were provided in Ho *et al.* (2013).

### Taxonomy

Genus *Neenchelys* Bamber, 1915

*Neenchelys diaphora* sp. nov.

Common name: Longfin worm eel

**Holotype.** NMMB-P17563 (475 mm), a ripe female, Dong-gang Fishing Port, SW Taiwan, northern South China Sea, otter trawl, 25 Nov. 2011.

**Paratypes.** NMMB-P16304 (430 mm), a ripe female, Dong-gang Fishing Port, SW Taiwan, northern South China Sea, otter trawl, 19 Mar. 2012, coll. H.-C. Ho. NMMB-P17553 (264 mm), sex indeterminate, Dong-gang Fishing Port, SW Taiwan, northern South China Sea, otter trawl, 9 Nov. 2012, coll. H.-C. Ho.

**Diagnosis.** A species of *Neenchelys* distinguished by a combination of the following characters: body relatively cylindrical, 2.8–3.3 times in HL, 28–35 in TL; dorsal-fin origin at midpoint of trunk, 1.2–1.5 times in HL behind gill opening; predorsal length 4.4–4.6 in TL; HL 9.9–10.8 in TL; tail 1.5–1.6 in TL; pectoral fin well developed and relatively large, 3.7–4.0 in HL; total vertebrae 177–186; MVF 35–54–181. Cephalic lateral-line pores 13–15; predorsal pores 35–38; preanal pores 56–59.

**Etymology.** From the Greek *diaphoros*, meaning different. Initially, the holotype was recognized as being very similar to *Neenchelys pelagica* sp. nov. described below. With two additional specimens collected from near the locality of the holotype, we were able to confirm its differentiation and describe it as a new species.

**Remarks.** A detailed description and comparisons are provided in Ho *et al.* (2013:8–9). Preservation coloration and dentition are provided in Ho *et al.* (2013: fig. 4). Meristic and morphometric data are provided in Ho *et al.* (2013: tables 1–2).

### *Neenchelys pelagica* sp. nov.

Common name: Pelagic worm eel

**Holotype.** NMMB-P15556 (392 mm), a ripe female, Dong-gang Fishing Port, SW Taiwan, northern South China Sea, midwater shrimp trawl, 10 Sep. 2009, coll. H.-C. Ho.

**Paratypes.** CAS 231943 (327 mm), a ripe female, and USNM 401022 (353 mm), a fully ripe female, collected together with the holotype.

**Diagnosis.** A species of *Neenchelys* distinguished by a combination of the following characters: body moderately elongate, relatively cylindrical, body depth 2.8–3.1 times in HL, 28–31 in TL; dorsal-fin origin at midpoint of trunk, 1.0–1.4 times in HL behind gill opening; predorsal length 4.3–4.8 in TL; HL 9.8–10.2 in TL; tail 1.5 in TL; pectoral fin well developed and relatively large, 3.8–4.6 in HL; total vertebrae 169; MVF 33–53–169. Cephalic Lateral-line pores 14; predorsal pores 36 or 37; preanal pores 56 or 57.

**Etymology.** From the Latin *pelagica*, in reference to its mesopelagic habitat.

**Remarks.** A detailed description and comparisons are provided in Ho *et al.* (2013:14–15). Preservation coloration and dentition are provided in Ho *et al.* (2013: fig. 8). Meristic and morphometric data are provided in Ho *et al.* (2013: tables 3–4).

### *Neenchelys similis* sp. nov.

Common name: Slender worm eel

*Neenchelys daedalus* (non McCosker): McCosker, 1982: 65 (non-types); Machida & Ohta, 1993: 391 (description, Japan); Nakabo, 2002: 217 (illustrated key, Japan).

**Holotype.** ASIZP 59925, 677 mm, female with immature eggs, Daxi Fishing Port, Ilan, NE Taiwan, bottom trawl, 20 Mar. 1998, coll. M.-L. Chiou.

**Paratypes.** NSMT-P105355 (580 mm), 35°00'N, 138°40'E to 34°58.02'N, 138°40'E, Suruga Bay, Japan, 1,376 to 1,450 m, beam trawl, 13 Nov. 1983, field no. RIUT.KT.8318.11.0101. FRLM 38980 (756 mm), Nayaaura, Minamiise, Mie, Japan, round haul net, 22 Apr. 2011, coll. M. Okada. FRLM 42319 (714 mm), Nieura, Minamiise, Mie, Japan, round haul net, 6 Mar. 2011, coll. M. Okada.

**Non-types.** AMS I.19707-017 (5, 172–187 mm), CAS 50709 (2, 187–225 mm), CAS 50710 (190 mm), ANSP 149295 (2, 175–185 mm), Manus Island, Papua New Guinea, 04°15' S, 145°11' E, 6-ft IKMT, 0 to 125 m, over a bottom at 750+ m, *FRV TAGULA*, 22 Oct. 1969, coll. J. E. Paxton; SIO 77-171 (144 mm), Banda Sea, 105 km SW of Buru I., 04°30.5'S, 125°34.6'E, 0 to 1500 m over a 3600 m bottom, 26 Aug. 1976, coll. J. Coatsworth.

**Diagnosis.** A species of *Neenchelys* distinguished by a combination of the following characters: body extremely elongate and slightly compressed, its depth 2.6–3.0 times in HL, 43–48 in TL; dorsal-fin origin at anterior 1/3 of trunk, 1.0–1.3 times in HL behind gill opening; predorsal length 6.8–7.7 in TL; head relatively short, 15.1–16.3 in TL; trunk 4.6–4.8 in TL; tail extremely long, 1.4 in TL; pectoral fin well developed, longer than snout.

Total vertebrae 260–265; MVF 34–68–262. Cephalic lateral-line pores 15 or 16; predorsal pores 35–37; preanal pores 70 or 71.

**Etymology.** From the Latin *similis*, like, in reference to its similarity to its congener, *N. daedalus*.

**Remarks.** A detailed description is provided in Ho *et al.* (2013:15–17). Preservation coloration and dentition are provided in Ho *et al.* (2013:fig. 9). Meristic and morphometric data are provided in Ho *et al.* (2013:tables 3–4).

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## References

- Bamber, R.C. (1915) Reports on the Marine Biology of the Sudanese Red Sea, from Collections made by Cyril Crossland, M.A., B.Sc., F.Z.S.—XXII. The Fishes. *The Journal of the Linnean Society of London, Zoology*, 31 (210), 477–485.  
<http://dx.doi.org/10.1111/j.1096-3642.1915.tb00694.x>
- Fricke, R. & Eschmeyer, W.N. (2015) Guide to fish collections. Electronic version. Available from: <http://researcharchive.calacademy.org/research/ichthyology/catalog/collections.asp> (accessed 30 April 2015)
- Ho, H.-C., McCosker, J.E. & Smith, D.G. (2013) Revision of the worm eel genus *Neenchelys* (Ophichthidae: Myrophinae), with descriptions of three new species from the western Pacific Ocean. *Zoological Studies*, 52, 58.  
<http://dx.doi.org/10.1186/1810-522X-52-58>
- International Commission on Zoological Nomenclature (2008) Proposed amendment of Articles 8, 9, 10, 21 and 78 of the International Code of Zoological Nomenclature to expand and refine methods of publication. *Bulletin of Zoological Nomenclature*, 65, 265–275.
- International Commission on Zoological Nomenclature (2011) ICZN meeting on electronic publication. *Bulletin of Zoological Nomenclature*, 68, 246–247.
- International Commission on Zoological Nomenclature (2012) Amendment of Articles 8, 9, 10, 21 and 78 of the International Code of Zoological Nomenclature to expand and refine methods of publication. *ZooKeys*, 219, 1–10.  
<http://dx.doi.org/10.3897/zookeys.219.3944>
- Machida, Y. & Ohta, S. (1993) New record for *Neenchelys daedalus* (Ophichthidae) from Japan. *Japanese Journal of Ichthyology*, 39, 391–394.
- McCosker, J.E. (1982) A new genus and two new species of remarkable Pacific worm eels (Ophichthidae, subfamily Myrophinae). *Proceedings of the California Academy of Sciences, Series 4*, 43 (5), 59–66.
- Nakabo, T. (2002) *Fishes of Japan with pictorial keys to the species. Vol. 1. English Edition*. Tokai University Press, Tokyo, 1749 pp.